

The Vermont Farmer.

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BOARD OF AGRICULTURE MEETINGS.
Tuesdays and Thursdays, December 1 and 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 1875.
Tuesdays and Thursdays, Dec. 14 and 16, 18, 20, 22, 24, 26, 28, 30, 1875.
Tuesdays and Thursdays, Jan. 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 1876.

The Gardener's Monthly says that up to the present time June grass has proved the best lawn grass. It should be sown alone.

The prices realized at the great Stuyvesant sale of Ayrshires at Poughkeepsie, N. Y., were low, and in some quarters regarded as indicating a decline in the popularity of the breed.

The time for receiving pedigrees for record in volume fifteen of the American Short-Horn herd book is, December 1st for bulls, and December 25th for cows, instead of the dates we named in a recent issue of the FARMER.

Perennial rye grass is in England regarded as the most valuable of cultivated grasses. It yields an immense amount of forage; is very early; is adapted to various soils, and is hardy to stock, if ripe. But it is not very nutritious, and is very exhaustive to the soil.

We have from S. I. Pierce, New York, a circular of Messrs. Ellingbush & Co., agents for the sale of Echo Farm butter, describing the manner of putting up for market, and confidently recommending it as the best in this [New York City], or any other market, at the moderate price of one dollar per pound, invariably.

Fruit trees which have not been protected from the depredations of mice, should be cared for. Treading down the snow about the trees prevents their making paths under it to the trees, and heads off their incursions. It must be followed up all winter. The best way is to apply some of the various safeguards, which last all winter, and which cost but little.

The Canada Farmer urges the adoption of a system of periodical stock sales at local centres for disposing of fat animals at auction. It results in a saving of time for both seller and buyer, and places all sellers on equal terms, a great gain to those who are not skillful judges, or well posted in the market, and it is an advantage to the less experienced buyers.

Our correspondent who writes for the FARMER this week the first of a series of articles on "Bee Keeping," is one of the most extensive and successful bee keepers in the country. His communications will embody the results and suggestions of his large experience in his chosen specialty, and will be of great value to those who keep bees, and of interest to all.

Large tracts of land in Colorado which possess the elements of fertility in abundance, are sterile for want of a reliable supply of water. Water is brought many miles in open ditches from the mountain streams, for irrigation, and other uses. A company has just been formed in Denver, with a million dollars as capital, for the purpose of bringing water to the city.

The Scientific Farmer, hitherto published at Amherst, Mass., a very able and interesting paper, has been transferred to Messrs. Clark W. Bryan & Co. of Springfield, Mass., and will be hereafter published by that firm. Messrs. Huntington & Libby, though full of enterprise and pluck, found that it takes a good deal of capital to run a paper. We wish the Farmer success.

The Rural New Yorker complains that Brother Wetherell of the Boston Cultivator is hypocritical, calling on other people to settle questions in dairy husbandry, etc., by experiments, and saying how "very easy" it is; and suggests that his overstrained criticism of the labors of others give place to work in his own dairy to settle those questions. It is true enough that Wetherell has a habit of "settling questions" for careless or ignorant writers and editors, and it would not be strange if he makes a mistake occasionally.

The Massachusetts fish commissioners and people, who have taken great pains by rearing and statutory regulation of fishing to replenish the shad, once so plentiful in the Connecticut, have the satisfaction of seeing the greedy fishermen of Connecticut scoop out the shad by the thousand, in nets. Pennsylvania suffer in the same manner from the depredations of Marylanders in the waters of the Susquehanna. The only relief attainable by the aggrieved parties in either case is the satisfaction derived from the application of profane epithets to the vandals.

The superintendent of the Ridge Hill creamery writes to the Utica (N. Y.) Herald that he has been making tests of the comparative richness of the milk of night and morning; and the results incline him to

the conclusion that the difference, when it exists, is caused by the variation in the intervals between milking. The longer the interval the lower the percentage of cream. The night's milk of cows which were not milked at night until fifteen hours after the morning milking required 5.27 pounds more milk for a pound of butter than the morning's milk.

Mr. J. F. Wilkey writes to the Canada Farmer the opinion that crops can be doubled by utilizing electricity as a fertilizer or stimulant to crops. His plan is to construct a sort of battery or series of conductors for the collection of the fluid, by means of wires buried in the soil connected with others suspended by dry poles, at a cost of twenty shillings per acre. He makes out a very plausible case. We have heard of the wonderful effect of electricity in restoring something very like life to a corpse, but had not supposed that it is for vitalizing growing crops to be of practical value.

Mr. R. W. Stewart, recently appointed professor of agricultural science at Cornell University, in alluding to the college and its work, says: "Here principles are to be applied in practice, and disputed problems in the breeding and growth of animals, in the culture and fertilization of the soil for various crops, are to be settled by accurate comparative experiments. These will furnish students with opportunities for practical manipulations conducted in the best manner. Here the student will watch all the operations upon the soil conducted with the best implements in the hands of experts."

A ram's fifty-pound fleece of wool was shipped east from California, last year, and made a great stir in some classes of monstrosity worshippers. It has now been cleaned, and the result is twelve pounds of wool and hurs, the latter estimated at two pounds. That leaves a fleece of wool estimated at ten pounds, a shrinkage of eighty per cent. If that fleece did not cost more than it was worth, then we are no judge of the value and cost of wool and grease. We can see a nine-pound fleece from a two-year-old full-blooded Merino ewe, and it cleaned six pounds lacking an ounce, and didn't think it worth bragging about.

The Western Rural favors having cows come in autumn and milked through the winter. The price of butter is then higher; there is more time for milking and caring for milk; the heat is not extreme, and there are no flies. The system of winter feeding and care prevalent on many New England farms would be fatal to the success of a winter dairy. Cows that give milk in winter must have warm quarters, where they can be comfortable, early cut hay made from sweet grasses, and grain in many cases, regular feeding and accessible water in abundance. These conditions being supplied, there is no reason why winter dairies should not be a success, so far as the production of milk is concerned. The milk room needs to be a different place from that of summer.

Winter Care of Stock.

Winter closed in early on farmers this year, and a long term of feeding cattle at the barn is probable. The first, last and most important work for the next few months is the care of stock. For the farmer and the farmer's boys a recurring round of chores calls them morning, noon and night. There are but few first-class hands to do chores, either owners or hired help. It is extremely difficult to hire help who are competent to take care of stock. The simple routine of feeding, watering, cleaning stables and shutting the door with a slam the moment it is done, never makes good stock. The cost of wintering stock is so heavy compared to summering that the wasteful and indifferent way it is done appears more flagrant. It is not easy to make stock gain as fast in winter as in summer, but it can be done, at a big profit over common methods. It costs nearly as much to keep animals alive and at a stationery point in weight and value as to make them grow. The cost of barely holding the amount gained in the summer, at an expenditure of one to two and a half tons of hay in winter, balances the profit on summer gain, and frequently over-balances, so that there is an actual loss in the year. Farmers may well complain that farming does not pay, when these losses are to be charged to the account.

Certain things are essential to good care of stock, such as will make them thrive. The first is

Warm, Comfortable Quarters.
Without warm barns and stables little can be accomplished. There is a constant drain upon the adipose matter in the food and in the system to maintain animal heat. If animals are exposed to all temperatures, storms and cold winds, it requires about as much food as they can eat to simply sustain the temperature of the body and to supply motive and nervous power. Barns and stables should be so constructed that they can be effectively closed against the entrance of cold wind. If the boarding is tight, and no air-leaks or cracks, the stable can be kept at a comfortable temperature. When the stable is old and the walls full of cracks, a very effective method of making them warm, at small expense, is to put up inside walls and fill the space between (from four inches to one foot) with dry sawdust. It is a fine non-conductor. Batter all cracks and make everything snug. Sheep should have plenty of room to eat all at once, and dry footings (as important as food). Cattle must have the privilege of lying down in comfort, resting undisturbed and rising with ease. Stanchions are hard, cruel things for cattle of medium or large size. Chains or bows should be adopted as an act of humanity.

The buildings and stables being warm and comfortable, the farmer has leisure to give his attention to

value of hay is great. Calves and lambs need the best of hay. Milch cows ought to have the best the farm affords.

The matter of feeding grain is one that is not comprehended by many. It pays to feed grain to stock. There is no way in which a farmer can make so profitable use of grain as by keeping his animals thrifty.

Roots have an important place in winter economy on the farm. In connection with any other food the stock may have, their value is great. The mingling of foods so as to create a proper balance in the nutritive elements, by which only can the whole be utilized should be a study on every farm. With everything useful at hand, and abundant skill and understanding of the subject, there will be failure unless there is constant

Overnight and Watchfulness
of the animals themselves. The farmer should see every day that each animal is right, and takes its ration and thrives. The care of stock is greatly relieved and their comfort and growth enhanced if there is a good supply of

Running Water
conveniently located where they can get it without exposure to fierce winds and wading through snow or mud. A stream which never freezes over is preferable to one that closes itself by the action of cold in half an hour, in winter millions in a stock yard.

Store animals, those kept for breeding purposes and to remain on the farm cannot be healthy and sound without exercise. If they are confined, with no chance to move about, the vital, digestive and reproductive functions lose their tone, and a feeble stock is the result. For fattening animals the less exercise the better. For all, a quiet, contented life, free from fear, excitement and discomfort, is essential.

George Geddes on Side Hill Plows.

Mr. George Geddes of New York, who writes much for the papers on agricultural topics, and whose articles are received with great respect, has written to the New York Tribune condemning swirl plows. He says that the Geddes farm is fully supplied with side-hills, some of them quite steep, and we own a good side-hill plow, so called; that is, a plow that by being turned, throws the furrows either way. This plow has stood idle in the tool room for probably twenty years, never once used, as we have found how to cut our side-hills and do our work without this side-hill plow. Some cases will not admit of our way of doing things, and a side-hill plow must be used; but they are, in my opinion, only to be used in cases where an ordinary plow cannot be. As to the dead furrows and back furrows made in the use of the single mould-board plow, they amount to nothing practically. Any man that has done much plowing will have ways of making the dead furrows so shallow and the back furrows so low that they will hardly be noticed by the driver of the mower or the reaper. He thinks the avoidance of dead furrows and back furrows is not of sufficient importance to justify poor work and heavy drawings of the teams.

If Mr. Geddes will try a swirl plow made at the present day perhaps he will change his mind as to the value of such plows. The sweeping condemnation of swirl plows, because the farmer tried one twenty years ago, looks bigoted to those who turn their soil with a swirl plow, whether on level land or side-hill, and do it as well as any land side plow.

For the Vermont Farmer.
Smut in Grain Again.

EDITOR VERMONT FARMER.—In your issue of July 30th I noticed a communication from a man on the subject of smut in grain, in which it was claimed that it (smut) came from a parasite on the original grain, and claimed it had been proved. I sat down and wrote you an invitation to have the proof published, that interested parties might judge for themselves. Your answer was that your columns were open for all, and I infer that Prof. Brewer (the first writer) stepped one side for the time to let others speak; so, contrary to my usual custom, I attempt to try my experience and opinion on the subject, which will be confined to wheat.

Twenty-seven years ago last spring I sowed two and one-fourth bushels of wheat on one and one-fourth acre of land, some of the last days of April, dry, with no previous preparation, and harvested the same very thoroughly, more than I had been in the habit of doing, for the reason that one of the spars of horses used was a high-spirited colt and I was bound to sober her, not expecting any other benefit from extra harrowing. The land was planted to corn the year before, well manured in the hill and broadcast on the top. The result was a good yield of very plump wheat with not a head of smut in the whole field.

The week following I took from the same bin a like quantity per acre and sowed one acre with no preparation and harvested it very lightly, a shower of rain coming upon me; it rained for three days more or less, so that I did not take out my team; the fourth day I was called away from home; the wheat was up the fifth day and I, being young, thought it would ruin it to move it; did not harrow it any more. The land was stubble ground, lightly manured, plowed in. The result was a very light crop, one full fourth of the heads filled with smut. The subject then being discussed in the Boston Cultivator, several persons called and examined both fields and came to the conclusion that there was nothing in the seed that produced smut. But that it came from a lack of the main or tap root extending down sufficiently to reach sufficient nourishment to carry it up with proper vigor and life. The examination showed, as was claimed by some as the cause, in some instances the main root eaten off and thus deprived of the life food while others showed

a perfect root but short and light as though the seed was left too far from support.

I will express my opinion of Prof. B.'s theory, and hope he, or others, may criticize mine. I think all soaking seed an injury for it swells the grain prematurely, to fully or partly shrink before it naturally germinates. I account for the credit the bringing gets this way. The thorough farmer who is faithful in one respect is very generally thorough in all, of course he harrows his grain in very thoroughly and gets a good crop, but I may be mistaken in the cause.

Will Prof. B. account for the difference in the crop? We are very far apart; and I think the readers would like to have the matter settled before we further advise in the way for others to follow. I think he is sustained by theorists generally, but I claim to be sustained by facts, which are stubborn things.
C. W. B. DUNNELL.
Marshfield, November 22, 1875.

[Does Mr. Dunnell wish to be understood as stating his belief in the principle he lays down, as the result of one crop of wheat; or has he observed the same effect in other seasons? It is a very unsafe thing to enunciate a principle in agriculture from the facts observed in a single experiment. May not the germ of smut exist equally in seed sown in two different fields, and the conditions in one be so unfavorable to its development and so favorable to the growth of a strong, healthy crop that the crop may be entirely free from smut, while in the other its development may be early and active to such a degree as to impede the healthy growth of grain as well as to appear in the grain?]

For the Vermont Farmer.
Wintering Bees.

During the last three or four years very heavy losses have been sustained by the beekeepers of northern United States in wintering their bees. Whether these losses have occurred in consequence of the introduction of the movable comb hives or the Italian race of bees, the severity of our winters or a deterioration of the quality of honey, or from other causes, I do not now wish to discuss. Certain it is that in many sections it is found much more difficult to winter bees successfully than formerly. While this difficulty in wintering has been a present disadvantage, it has led our most intelligent beekeepers to carefully investigate the whole subject and more light has been thrown upon it than ever before.

As the temperature lowers in autumn a colony of bees draw closely together to maintain a sufficiently warm temperature among themselves. They eat the honey adjoining or next to the cluster to maintain life and heat. This honey is digested in the stomach of the bee, and after having served its purpose, the liquid portion of the waste passes from the bees in the form of perspiration while the solid matter is retained in the abdomen of the bee until spring or the first opportunity for flight.

If the hive is tight, the moisture condenses on the cold walls of the hive and the comb, and if the hive is out of doors, frequently covers the comb with ice and the bees starve with honey enough to last till spring, or if the hive is kept warm it will be so damp that the comb will mould and become worthless. Again if the cluster of bees is too small to generate a sufficient amount of heat, or if the honey is very thin and watery, the bees being unable properly to digest and assimilate it, and rid themselves of the superfluous moisture until their abdomens become swollen and they become diseased and soil their combs and have with fecal matter and soon dwindle away until the colony is dead or so depopulated as to be worthless.

If they are frequently disturbed they are apt to go themselves with honey and become unhealthy. From the foregoing explanations will be seen the reason for furnishing every hive with good thick honey. Firstly, if any hive has not sufficient food it fed as early as August, and sealed before cold weather, as unsealed honey will soon absorb moisture and become thin and unfit for food.

Secondly, let the colony be of good size as such colonies can successfully resist the cold. Better put two weak ones together than try to winter separately unless you have a very warm dry cellar.

Thirdly, keep the inside of the hive as dry as possible. If your bees are in box hives let all the holes into the chamber be open. Better yet, place over them some refuse wool or woolen cloths, which will retain the heat while the moisture escapes. If in movable comb hives, let the honey board be removed and a light straw mat take its place, or old woolen garments, or old carpeting, or two thicknesses of cotton with a little dry chaff or sawdust. These substances allow the moisture to escape while they retain the heat. The summer entrance should be left open, only so arrange it that mice cannot enter.

Fourthly, the proper temperature. If hives remain out of doors, the warmer you make them, the better, provided they are kept dry. If in the cellar let it be perfectly dark and as dry as possible and as warm as the bees will bear. If too warm the bees become restless and consume more honey than for their good; from thirty-five to forty degrees will do. Damp cellars can be made more dry by setting on the floor a number of dishes partly filled with salt. The salt will absorb the moisture from the air and you can turn it from the dishes in the form of brine.

Fifthly, keep the bees quiet and not disturbed more often than necessary during winter. Let them rest till the warm spring days.

In short, keep the bees warm, dry, and quiet. I have hinted at the way. Use your own judgment.
J. E. C.

For the Vermont Farmer.
Saving Hay by Feeding Meal.

I would like to inquire through the columns of the FARMER how much hay would be saved by feeding two quarts of corn meal to a cow a day? Would ten bushels of corn equal one ton of hay? If a cow requires two and a half tons of hay alone to winter her, would one ton be saved by feeding ten bushels of corn? Does any one know by experience?

[We would be glad if those who have investigated this question would give the readers of the FARMER the benefit of their experience, as that is what our correspondent wishes, and is the only real test.]

The result of our experience is that a good, healthy cow will eat two quarts of corn meal a day and just as much hay as if she had no meal. Some cows in some circumstances will eat more hay if fed a moderate daily ration of meal. Good cows will make a return for it in milk or in condition and vigor stored up as a reserve to be drawn upon next season. Poor cows will make little or no paying return for it. They pay for nothing.

Meal may be made to take the place of hay in part, and according to the practice of Mr. L. W. Miller of Stockton, N. Y., it may replace it altogether, as winter food of cows. Mr. Miller winters cows on the average of three quarts of corn meal a day, which would require about seventeen bushels of corn. Reasoning by analogy, it may be assumed that seven bushels of the meal may be replaced with a ton and a half of hay and the cow wintered well.

Whether ten bushels of corn meal (about 500 pounds) is the equivalent of a ton of hay depends on the quality of the hay. There is fully eighty per cent difference in the value of hay, in our opinion. As it is not our purpose to take the question out of the hands of practical farmers, we say no more, but call on them to tell us what they know.]

For the Vermont Farmer.
Raising Trout.

EDITOR VERMONT FARMER.—Agreeably to my promise, I will give your readers my experience, for the last year, in trout raising. Although I have been operating on a small scale, I can say it is quite satisfactory and promises well for the experiment so far. I caught one a few in September, the largest weighing one pound each. When the same trout were put in one year ago did not weigh one-half pound. I think I can safely say that trout will double their weight each year if properly fed, which can be done with little trouble and expense compared with raising pork and poultry.

I can see no reason why people should not improve their first opportunity, where there is a possible chance, and make a fish pond. I have seen hundreds of places superior to my own, that are unoccupied. Therefore, I would say to my brother farmers that I never had the care of anything that gave me more pleasure to feed, than it does to feed the trout. Instead of its being a task it is merely a pleasure in summer to throw food upon the surface of the water and witness the display of the bright, speckled sides as they come to the top of the water. Try it and then you will believe it. I can see no reason why it will not be a profitable investment.
G. C. H.

Barrington, P. Q., November 24.
For the Vermont Farmer.
The Sick Heifer.

MR. EDITOR.—Being one of your subscribers, I noticed the inquiry, concerning the sick heifer, of Mr. Roberts, and have had some experience in this matter. I had a two-year-old steer, several years ago, which I had not noticed as being ailing until I drove him up with the rest and put him into fall feed. The next day I noticed he tried large doses of physic, and many kinds, but without effect. He followed the rest about, and then would lie down and stay until they went to another part of the field, and then would follow and lie down. After following for nine days, the tenth day, thinking he would die, as he had not eaten, but a very few mouthfuls of food in the time, I had him killed, and found his gall nearly as large as a quart pitcher.

One year ago last spring I had a yearling steer taken very much as the other, and, being very desirous of saving him, I thought to try bitter thistle and snake-head, steeped together, steeped very strong, in quart doses, three times a day, which cured him. (Blessed thistle and water jenny). I believe it to be enlargement of the gall, which, in my mind, needs something better.

Fairfax, November 22, 1875.
For the Vermont Farmer.
Echo Farm Again.—Explanation.

MR. EDITOR.—Your correspondent, Agriculture, seems to infer from what we said, that we doubted the value of the butter produced on Echo Farm. We said no such thing; but so long as he asked people to judge of its worth, we replied that he had not told us enough to judge by; and that, although the cows were fed on pasture and meadow lands, and kept in barns as clean as a kitchen (ought to be), that would not be all that is requisite in making good butter;—simply said, let us know the rest of it.

P. L. HOPKINS.
The Vinewood herd of Short-Horns of B. B. Groom, Winchester, Ky., was the most remarkable except that of Judge Campbell ever held in this country. Forty-four American bred cows sold for \$58,210, and twenty imported ones for \$51,225. Four American bulls sold for \$17,710 and four imported ones for \$12,300. Seventy-three animals sold for \$123,450.

Discussion.
At a Meeting of Grafton Grange, November 12, 1875. Topic: "Manures and their Application."

S. D. Conant quoted the saying of John Johnson: "Give me all the manure I want and I can have everything I want."

Making and saving manures is the most important part of farming. Our barns should be provided with cellars and an abundance of absorbents used. The manner of applying manure depends upon the condition of the soil: if the soil is dry cover, if moist top dress. Upon his farm ashes are very valuable and he will strongly urge their abundant use by others. He had used superphosphate with good results.

O. S. White. Upon our soils manure is essential; with it we can raise good crops, without it we can do nothing. The farmer should increase the size and value of his manure heap in every possible manner. His practice is to draw out all his stable and yard manure in the spring, applying it to his hool crops, using special fertilizers in the hill to give the crop an early start, by this method he finds superphosphate used at the rate of one-half barrel per acre, to be of as much benefit as a small shovel-full of rotten manure applied to each hill. He uses the manure accumulated in his yards, during the summer, as a top-dressing upon grass. Has no barn cellar but thinks one would be worth fifty dollars per acre in the increased value of manure. Finds ashes to be the cheapest special fertilizer that he can use.

E. C. Palmer thought, that in order to farm profitably on our sterile soils, we must know how; must make all the manure possible, and apply it in the best manner. Grass is our main crop. In growing more of it, we should save both labor and manure. Top-dressing is the best method of applying manure to grass. Some of our lands contain foul grasses. Such must be plowed, manured and reseeded. Is not troubled with superphosphate on the brain. It is worth something for the first crop, but is not lasting. The same money expended for ashes would purchase a fertilizer which in the end would yield much more satisfactory results.

W. A. Dean has planted corn and potatoes upon June grass sod, and found that upon such soil the application of superphosphate in the hill will yield as good returns as well-rotted yard manure applied in the same manner. Receives but little benefit from ashes upon his soil.

Hearty Woolley thinks that the less superphosphate a farmer buys the better he is off. During the past season he manured his corn in the hill with a mixture of horse and hog manure, to a small portion of the field in addition to the above he used superphosphate, using for the purposes of experiment twenty-five cents worth. The crop on the portion thus treated exceeded the crop on an equal portion not thus treated to the amount of four quarts of ears of corn.

David Hitchcock has much benefited his corn crop by the use of a compost made as follows: three barrels of ashes, two barrels of hen manure, and five loads of rotten manure applying the above amount to one and one-half acres in the hill.

Comments by the Reporter.
The importance of using an abundance of fertilizing material was enforced with emphasis. All felt the importance of securing and applying all the farm manure possible, but were divided in opinion in regard to the value of special fertilizers. Some had derived very great benefits from the use of ashes; others could see no good resulting therefrom.

Speakers were divided in regard to the merits of superphosphate. In Mr. Woolley's experiment the conditions were such that a failure was inevitable. Applying in the hill a shovel-full of the mixture of well-rotted hog and horse manure he had supplied all the elements necessary to promote a good growth, in a farm immediately available, consequently the addition of a portion of the same elements in the form of superphosphate made no difference.

Mr. White applied a small portion of superphosphate in the hill, on land heavily dressed with raw stable manure, thus furnishing the young plant with available fertilizing material sufficient to give it an early start while the stable manure did its work later in the season.

The conditions of Mr. Dean's experience upon June grass and which is deficient in phosphates were such as would be likely to give the best results from the use of superphosphate.
J. H. PUTNAM, Secretary.

Potato Diggers.

There is no work on the farm that brings the mortality of the poor human frame to mind more forcibly than digging potatoes. If there is a weak spot or a screw loose in a man's anatomy, digging potatoes a few days will reveal the fact. It is an expensive crop if all the labor is hired. The planting can be done by horse power; also most of the hoeing. We have been looking for a digger that will work. When such a machine is offered to farmers they will consult their own interests by accepting it.

The readers of the FARMER will be interested in a description of the operation of the potato diggers at the New York state fair, which is reported in the American Rural Home.

On Thursday, the various potato diggers on exhibition, with a few exceptions, repaired to a potato field north of the fair grounds, to show how their machines work in practice. The field was well calculated to test their qualifications for their work, ranging as it did, from light to heavy loam, sticky clay, and in spots full of barren grass and thistles. The machines commenced on Early Rose, and the judges decided that each one should dig one row across the field, about thirty rods, and put them in stables that only break the heavy force of the wind, leaving currents in general circulation. Does any farmer think, if he stops to think about it, that it is cheaper to feed a cow three-fourths of a ton of hay, extra, to keep up an animal heat, than to spend fifty cents per animal to make his stable warm?—*Live Stock Journal.*

The Knott Digger, entered by Wm. Woodman, Rochester, a wheel digger with wide scoop for digging, and a shaking screen for separating the dirt from the tubers, and tappers for unclogging, next went through. It went its work without clogging, and left the tubers bare on the surface, less scattered than by either the preceding. It dug adjoining rows, and could easily do it with rows three feet apart. We think it would soon save a large potato grower its cost—\$28.

The "Centennial," a new machine, made by James Norton, Hingham, N. J., represented by D. Voorhes, next entered the lists. It is a new machine, with two rotating plungers for digging, throwing the potatoes together, when falling upon a rapid shaft, they were separated from the dirt and left bare pretty well on the centre of row. It seems to move easily and quietly but clogged once or twice in thick clods of grass.

George W. Kintz of Haverhill next tried his digger. It is a kind of plow, with wide mould-board and share, a wheel inside of land-side, a hook ahead to straighten tops, and curved rods and straps to receive and separate the potatoes. It went through smoothly, lifting out the hill, and leaving the tubers more in bunches, and a little more mixed with soil than did the others. It would be a great aid to a farmer in digging his crop, and worth the cost, \$35.

The diggers were then called to work in Peacham, with rough, stony tops. The Centennial first tried, clogged and gave it up.

Knott's first pat on the tongue, a long run row, with two hooks to straighten the tops, and went through without clogging.

Knott took off the rods, went through, clogging some, but not enough to cause a failure.

Kintz went through successfully, leaving the tubers on top of the ground, but adhering to the tops, which may be said of all of them.

Absorption of Ammoniacal and other Gases by the Soil.
A correspondent of the Ohio Farmer states that the power of a fertile soil to absorb ammoniacal gases is greater than that of a barren soil. He says:

We alluded in our last to the power possessed by soils and porous bodies generally of absorbing ammoniacal and other gases, and we now draw attention to the power soils possess of retaining from their solutions, the fertilizing constituents of manures. Experiments made in England by Prof. Way and other distinguished chemists, show that soils which are considered fertile, possess the power of absorbing and retaining the ammonia, potash, soda, etc., which constitute their chief manuring properties. The washings from rich loams, which contain but little ammonia, phosphates or salts of potash; showing that the soil through which they had passed had absorbed those substances and retained them. In sandy and other poor soils they passed through with the water to great extent.

It appears as though the rich soils which possess this property, have, in some way, the power of separating ammonia, potash, lime and superphosphates from their acid combinations (sulphates, muriates, nitrates), and permitting these acids to pass through in other combinations. These experiments have been made by different chemists and are substantiated by the striking coincidence in the results; they go to show in a general way, that in rich soils manures produce a better result when placed on the surface, than when immediately plowed in. They suggest, also, the advantage of covering the barn-yard with an abundant thickness of loamy earth, before the cattle are admitted, so that the valuable constituents of the drainings and juices may be retained and not lost.

Cure of Foot and Mouth Disease.

A writer in the Mark Lane Express states that it is possible to cure the disease in four days. His treatment is as follows:

He isolated the animals affected, put them in a building by themselves, covered them up to get them warm, deprived them of food, and gave them the following: Eight ounces saline, four ounces treacle, one ounce nitrate, one ounce ground ginger, and two ounces sulphur, mixing it in four or five quarts of milk-warm water. The next morning he gave one ounce carbonate of potash and two ounces hyposulphite of soda, in a quart of warm water. This treatment was continued three days, and on the fourth the disease had almost entirely disappeared.

Management of Stock in Winter.

The time has come for the farmer to look particularly to his means of making his animals comfortable during the cold period. It ought to be too well settled at this day to require further mention, that no farmer can afford to keep his stock exposed to the weather, or even in stables with a small ventilator between each two boards. He cannot afford to warm all out doors, or a cold stable, by burning food inside his animals for that purpose. But notwithstanding all the sermons, and all the discussions at clubs, thousands will still feed their stock at a stove, or hay stack, or put them in stables that only break the heavy force of the wind, leaving currents in general circulation. Does any farmer think, if he stops to think about it, that it is cheaper to feed a cow three-fourths of a ton of hay, extra, to keep up an animal heat, than to spend fifty cents per animal to make his stable warm?—*Live Stock Journal.*

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